North American Drought Monitor – December 2003

CANADA: During the month of December precipitation was above average on the west coast. In the Interior regions of British Columbia, Alberta, Saskatchewan precipitation was well below average. Precipitation was variable but near average in most agricultural regions of Manitoba. All northern regions of the Prairie provinces reported well below average December precipitation. Ontario reported average or above average precipitation in all but parts of the southwest region. Quebec generally received average to well above average precipitation. Precipitation was variable in New Brunswick, near average in Nova Scotia, below average in Labrador and western Newfoundland and average or better in eastern Newfoundland.

On the Canadian Prairies, moderate to severe drought conditions persist in northern and eastern agricultural regions of Saskatchewan and western Manitoba. Snowfall accumulations have been very low in Saskatchewan and Alberta. Drought risks are more pronounced in Alberta than a month ago. Conditions in northwest and Peace River regions of Alberta are moderated by the winter, however, abnormally dry to moderate drought conditions persist and the status will decline if snowfall doesn't improve. Snow accumulations in the mountains as of January 1, 2004 are generally below-average to average for this time of the year. The mountain snow pack is an important source of water supply to reservoirs on the Canadian Prairies.

A moderate drought condition persists in northwest Ontario due to the persistence of low lake levels, which is expected to continue until spring. There are no drought related issues in eastern Canada. Heavy precipitation in some regions of Ontario and Quebec has increased the risk of flooding.

UNITED STATES: November's stormy weather pattern continued into December across the western drought areas, the notable exception being the Southwest region, which saw below-normal precipitation extending from southern California into Texas. For the rest of the West, monthly precipitation mostly ranged from 150 to 400% of normal, resulting in near to above-normal mountain snow pack. Although it was still early enough in the snow season to prevent making major changes to the western drought depiction, the promising increase in mountain snow pack allowed one-category improvements to the drought categories in parts of the Great Basin and Rockies. The drought situation failed to improve in the Southwest, with D1 to D4 levels persisting from Arizona through New Mexico into western Texas. In the Plains states, monthly precipitation totals generally under 25 mm (1.0 inches) resulted in no significant changes to the drought extending across the High Plains region and the upper Midwest. Late-December snow depth measured only 2.5 cm (1.0 inch) or less across the Great Plains winter wheat region from South Dakota southward to Kansas and Oklahoma. Kansas soil moisture rated 52% short to very short and wheat condition rated 21% poor to very poor. Oklahoma soil moisture rated 69% short to very short and wheat 26% poor to very poor. In Alaska, below-normal precipitation resulted in continued D0 dryness in the southeastern interior. In Hawaii, D1 drought lingered in western Molokai and western parts of the Big Island as of late December, but heavy rains in early January 2004 brought major relief.

MEXICO: Although December is generally the beginning of the winter dry season in most parts of Mexico, December 2003 was exceptionally dry through most sections of the country. The SMN reported an aerial mean of only 64% of normal precipitation for the country, with the largest deficits noted in Northwest Mexico and along the coastal states of the Gulf of Mexico (except Tabasco and Chiapas).

These two regions of Mexico typically receive moderate precipitation during December. For the country as a whole, December 2003 was ranked as the 4th driest December for the period 1941-2002. The dry conditions over Mexico were associated with a northward displacement of the polar jet stream and a weak subtropical jet stream.

Despite the dry conditions in December, only minor changes in drought conditions were noted across Mexico. Due to the low rainfall totals in Northwest Mexico, abnormally dry (D0) and moderate drought (D1) conditions increased over Sinaloa and Chihuahua. Over central Mexico three new, small areas of D0 developed and these included eastern Michoacán state and the western half of the state of México; the region surrounding Tuxpan in northern Veracruz (where only 24% of December normal precipitation was reported); and a section of the border between Oaxaca and Veracruz (the Papaloapan river drainage). Due to some good rains over Tabasco and parts of Chiapas, these states recovered from the D0 conditions reported last month.